Component Procedures: Alarm Module

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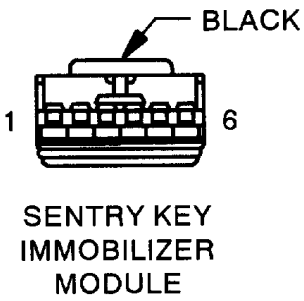
Components (itype_392)

SYSTEM DESCRIPTION
The Sentry Key
Immobilizer Module
(SKIM)
contains a
Radio
Frequency
(RF)
transceiver and a
central processing unit
, which includes the
Sentry Key Immobilizer System
(
SKIS
)
program logic. The SKIS programming enables the SKIM to program and retain in memory the codes of at least two, but no more than eight electronically coded Sentry Key transponders. The SKIS programming also enables the SKIM to communicate over the Chrysler Collision Detection
(CCD)
data bus network with the
Powertrain Control Module
PCM
, the instrument cluster and/or the DRB scan tool.
The SKIM transmits and receives RF signals through a tuned
antenna
enclosed within a molded plastic ring formation that is integral to the SKIM housing. When the SKIM is properly installed on the steering column, the antenna ring is oriented around the circumference of the ignition lock cylinder housing. This antenna ring must be located within eight millimeters (
0.31 inches
) of the Sentry Key in order to ensure proper RF communication between the SKIM and the Sentry Key transponder.
For added system security, each SKIM is programmed with a unique "Secret Key" code and a security code. The SKIM keeps the "Secret Key" code in memory and sends the code over the CCD data bus to the PCM, which also keeps this code in its memory The SKIM also sends the "Secret Key" code to each of the programmed Sentry Key transponders. The security code is used by the assembly plant to access the SKIS for initialization, or by the dealer technician to access the system for service. The SKIM also stores in its memory the Vehicle
Identification Number
(VIN)
, which it learns through a CCD data bus message from the PCM during initialization.
The SKIM and the PCM both use software that includes a rolling code algorithm strategy, which helps to reduce the possibility of unauthorized SKIS disarming The rolling code algorithm ensures security by preventing an override of the SKIS through the unauthorized substitution of the SKIM or the PCM. However, the use of this strategy also means that replacement of either the SKIM or the PCM units will require a system initialization procedure to restore system operation.
When the ignition switch is turned to the On or Start positions, the SKIM transmits an RF signal to excite the Sentry Key transponder. The SKIM then listens for a return RF signal from the transponder of the Sentry Key that is inserted in the ignition lock cylinder. If the SKIM receives an RF signal with valid "Secret Key" and transponder identification codes, the SKIM sends a "valid key" message to the PCM over the CCD data bus. If the SKIM receives an invalid RF signal or no response, it sends "invalid key" messages to the PCM. The PCM will enable or disable engine operation based upon the status of the SKIM messages.
The SKIM also sends messages to the instrument cluster over the CCD data bus network to control the SKIS indicator lamp. The SKIM sends messages to the instrument cluster to turn the lamp on for about
three seconds
when the ignition switch is turned to the On position as a bulb test. After completion of the bulb test, the SKIM sends bus messages to keep the lamp off for a duration of about
one second
. Then the SKIM sends messages to turn the lamp on or off based upon the results of the SKIS self-tests. If

the SKIS indicator lamp comes on and stays on after the bulb test, it indicates that the SKIM has detected a system malfunction and/or that the SKIS has become inoperative.
If the SKIM detects an invalid key when the ignition switch is turned to the On position, it sends messages to the instrument cluster to flash the SKIS indicator lamp. The SKIM can also send messages to the instrument cluster to flash the lamp and to generate a single audible chime tone. These functions serve as an indication to the customer that the SKIS has been placed in its "Customer Learn" programming mode. See Sentry Key Immobilizer System Transponder Programming for more information on the "Customer Learn" programming mode.
For diagnosis or initialization of the SKIM and the PCM, a DRB scan tool and the proper Diagnostic Procedures are required. The SKIM cannot be repaired and, if faulty or damaged, the unit must be replaced.

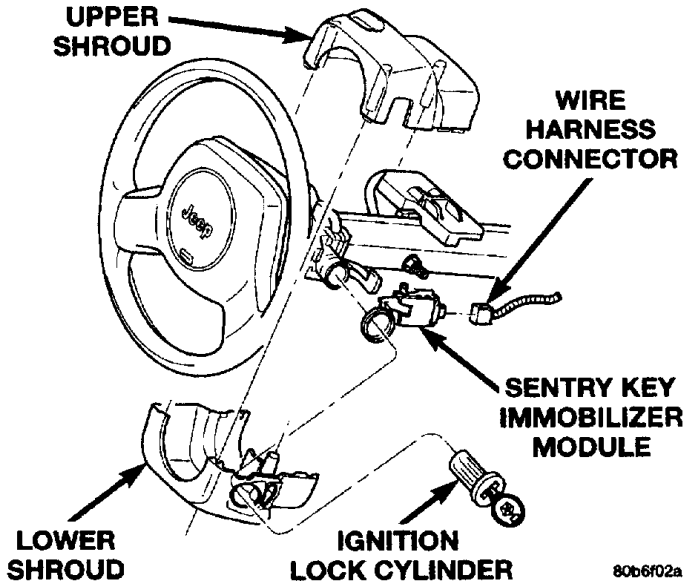
Connector Views (itype_47)



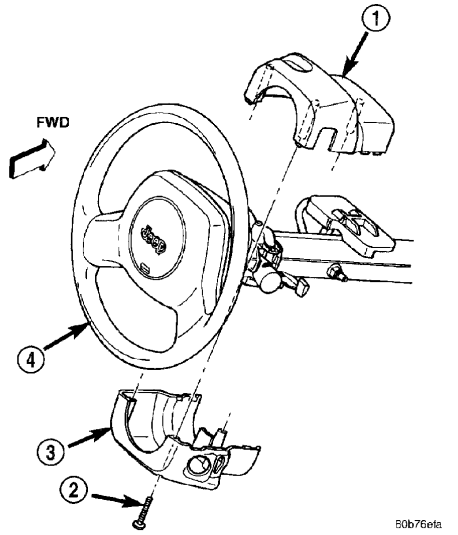
SENTRY KEY IMMOBILIZER MODULE - BLACK 6 WAY

CAV	CIRCUIT	FUNCTION
1	F34 20TN/BK	FUSED B(+)
2	Z1 20BK	GROUND
3	F15 20DB	FUSED IGNITION OUTPUT (ST-RUN)
4	Z12 20BK/LB	GROUND
5	D2 20WT/BK	CCD BUS(-)
6	D1 20VT/BR	CCD BUS(+)

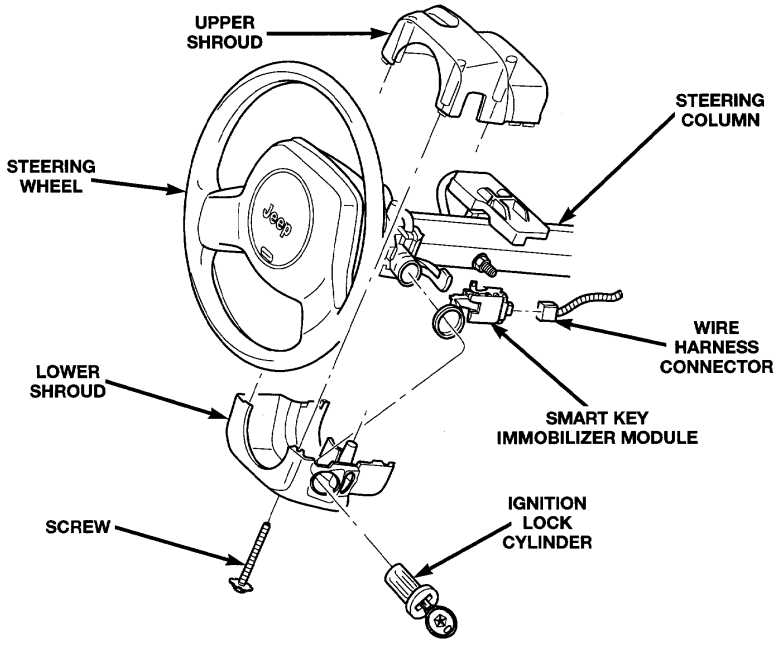
Components (itype_32)



Procedures (itype_376)



1 – UPPER SHROUD
2 – SCREW (3)
3 – LOWER SHROUD
4 – STEERING WHEEL



Technician Safety Information (itype_15)

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO RESTRAINT SYSTEMS / AIRBAG SYSTEMS BEFORE ATTEMPTING AI STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY

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